Appendix A: Functions Within a Sampling Project

The following table describes Quality Assurance Project Plan (QAPP) requirements taken from "EPA Requirements for Quality Assurance Project Plans," EPA QA/R-5.

Functions Within a Sampling Project	Elements of that Function
Project Management	
Project/Task Organization	Identifies the individuals or organizations participating in the project and defines their specific roles and responsibilities.
Problem Definition/Background	States the specific problem to be solved or decision to be made and includes sufficient background information to provide a historical and scientific perspective for each particular project.
Project/Task Description	Describes the work to be performed and the schedule for implementation to include: • Measurements to be made during the course of the project; • Applicable technical, regulatory, or program-specific quality standards, criteria, or objectives; • Any special personnel and equipment requirements; assessment tools needed; and • A work schedule and any required project and quality records, including types of reports needed.
Quality Objectives and Criteria	Describes the project quality objectives and measurement performance criteria.
Special Training/Certification	Ensures that any specialized training for non-routine field sampling techniques, field analyses, Laboratory analyses, or data validation should be specified.
Documents and Records	• Itemizes the information and records that must be included in the data report package and specifies the desired reporting format for hard copy and electronic forms, when used. • Identifies any other records and documents applicable to the project such as audit reports, interim progress reports, and final reports that will be produced. • Specifies or references all applicable requirements for the final disposition of records and documents, including location and length of retention period.
Data Generation and Acquisition	
Sampling Process Design (Experimental Design)	• Describes the experimental design or data collection design for the project. • Classifies all measurements as critical or non-critical.

Functions Within a Sampling Project	Elements of that Function
Sampling Methods	• Describes the procedures for collecting samples and identifies sampling methods and equipment. Includes any implementation requirements, support facilities, sample preservation requirements, and materials needed. • Describes the process for preparing and decontaminating sampling equipment to include the disposal of decontamination by-products, selection and preparation of sample containers, sample volumes, preservation methods, and maximum holding times for sampling, preparation, and/or analysis. • Describes specific performance requirements for the method. • Addresses what to do when a failure in sampling occurs, who is responsible for corrective action, and how the effectiveness of the corrective action shall be determined and documented.
Sample Handling and Custody	• Describes the requirements and provisions for sample handling and custody in the field, Laboratory, and transport, taking into account the nature of the samples, the maximum allowable sample holding times before extraction and analysis, and the available shipping options and schedules. • Includes examples of sample labels, custody forms, and sample custody logs.
Analytical Methods	• Identifies the analytical methods and equipment required, including sub-sampling or extraction methods, waste disposal requirements (if any), and specific method performance requirements. • Identifies analytical methods by number, date, and regulatory citation (as appropriate). If a method allows the user to select from various options, the method citations should state exactly which options are being selected. Addresses what to do when a failure in the analytical system occurs, who is responsible for corrective action, and how the effectiveness of the corrective action shall be determined and documented. • Specifies the Laboratory turnaround time needed, if important to the project schedule. • Specifies whether a field sampling and/or Laboratory analysis Case Narrative is required to provide a complete description of any difficulties encountered during sampling or analysis.
Quality Control (QC)	• Identifies required measurement Quality Control (QC) checks for both the field and Laboratory. • States the frequency of analysis for each type of QC check, and the spike compounds sources and levels. • States or references the required control limits for each QC check and corrective action required when control limits are exceeded and how the effectiveness of the corrective action shall be determined and documented. • Describes or references the procedures to be used to calculate each of the QC statistics.

Functions Within a Sampling Project	Elements of that Function
Instrument/Equipment Testing, Inspection, and Maintenance	• Describes how inspections and acceptance testing of environmental sampling and measurement systems and their components will be performed and documented. Identifies and discusses the procedure by which final acceptance will be performed by independent personnel and/or the Contract Laboratory Program Project Officer (CLP PO). • Describes how deficiencies are to be resolved and when re-inspection will be performed. • Describes or references how periodic preventative and corrective maintenance of measurement or test equipment shall be performed. • Identifies the equipment and/or system requiring periodic maintenance. • Discusses how the availability of spare parts, identified in the operating guidance and/or design specifications of the systems will be assured and maintained.
Instrument/Equipment Calibration and Frequency	• Identifies all tools, gauges, instruments, and other sampling, measuring, and test equipment used for data collection activities affecting quality that must be controlled, and at specific times, calibrated to maintain performance within specified limits. • Identifies the certified equipment and/or standards used for calibration. • Describes or references how calibration will be conducted using certified equipment and/or standards with known valid relationships to nationally recognized performance standards. If no such standards exists, documents the basis for calibration. • Indicates how records of calibration shall be maintained and traceable to the instrument.
Inspection/Acceptance of Supplies and Consumables	• Describes how and by whom supplies and consumables shall be inspected and accepted for use in the project. • States acceptance criteria for such supplies and consumables.
Non-Direct Measurements	• Identifies any types of data needed for project implementation or decision-making that are obtained from non-measurement sources (e.g., computer databases, programs, literature files, historical databases). • Describes the intended use of data. • Defines the acceptance criteria for the use of such data in the project. • Specifies any limitations on the use of the data.
Data Management	• Describes the project data management scheme, tracing the data path from generation in the field or Laboratory to their final use or storage. • Describes or references the standard record-keeping procedures, document control system, and the approach used for data storage and retrieval on electronic media.

Appendix B: CLP Sample Collection Guidelines for Volatiles in Soil by CLP-Modified SW-846 Method 5035

DOCUMENT CURRENTLY UNDER REVIEW AND REVISION

Appendix C: General CLP Sample Collection Guidelines Volatiles in Water

Note: Please note that Regional guidance and/or specific Project Plan requirements will supersede the guidelines listed below.

Collect the following:

Two 40 mL glass containers with Polytetrafluoroethylene (PTFE)-lined septa and open top screw-caps that are filled to capacity with no air bubbles, preserved to a pH of 2, and cooled to 4°C or less.

Carbonates, Residual Chlorine, Oxidants, and Sulfides:

Samplers should obtain Regional guidance when testing and ameliorating for:

- Carbonates;
- Residual chlorine (e.g., municipal waters or industrial waste waters that are treated with chlorine prior to use or discharge); or
- Oxidants.

Perform the following for *Pre-Preserved* Vials:

1. Pour the sample slowly down the edge of the sample vial to avoid excess aeration or agitation of the sample during filling.

2. Fill the vial completely so that a reverse (convex) meniscus is present and ensure that there are no air bubbles present (either in the body or especially at the top of the vial).

3. Place the septum on the vial so that the PTFE side is in contact with the sample, then firmly tighten the cap.

4. Gently flip the vial a few times to ensure that the sample is mixed with the acid preservative.

5. While holding the vial upright, gently tap the sample to check for air bubbles (either in the body or especially at the top of the vial).

6. If air bubbles are present, discard the sample and select a new vial in which to recollect a new sample. Repeat Steps 1-5 above.

7. Do NOT mix or composite samples for VOAs.

8. Cool sample to a temperature of 4°C or less. Samplers should begin the cooling process in the field as samples are being collected. Double-bagged ice should be used. DO **NOT** FREEZE SAMPLES.

9. Immediately transfer the vial to the sample shuttle (device that contains a "set" of VOA vials) once it has been collected. Do NOT allow ice to touch the vials.

Perform the Following for *Empty* Vials:

1. Rinse the vial with sample water prior to actual sample collection and preservation.

   Note: Regions vary in their approach to pre-rinsing and/or re-using sample vials (e.g., some Regions do not recommend pre-rinsing and/or re-use of pre-cleaned containers using sample water). Be sure to follow Regional guidance.

2. Add 1-2 mL of acid preservative to the vial. **Check to ensure that the sample you are collecting requires a preservative** (follow Regional guidance).

3. Pouring the sample slowly down the edge of the sample vial to avoid excess aeration and agitation of the sample.

4. Fill the vial completely so that a reverse (convex) meniscus is present and ensure that there are no air bubbles present (either in the body or especially at the top of the vial).

5. Place the septum on the vial so that the PTFE side is in contact with the sample, then firmly tighten the cap.

6. Gently flip the vial a few times to ensure that the sample is mixed with the acid preservative.

7. While holding the vial upright, gently tap the vial to check for air bubbles (either in the body or especially at the top of the vial).

8. If air bubbles are present, discard the sample and recollect a new sample using the same sample vial. Repeat Steps 1-6 above.

9. Check the recollected sample for air bubbles. If air bubbles are present, additional sample water may be added to the vial to eliminate air bubbles. If there are air bubbles after three consecutive attempts to eliminate air bubbles by the addition of sample water, the entire sample and sample vial should be discarded and a new sample collected.

10. Do NOT mix or composite samples for VOAs.

11. Cool sample to a temperature of 4°C or less. Samplers should begin the cooling process in the field as samples are being collected. Double-bagged ice should be used. DO **NOT** FREEZE SAMPLES.

12. Immediately transfer the vial to the sample shuttle (device which contains a "set" of VOA vials) once it has been collected. Do NOT allow ice to touch the vials.

Things to Remember:

- Samples **must** be shipped as soon as possible, preferably on the same day as sample collection to avoid exceeding sample holding times. If overnight transit is not possible, samples should be maintained at 2 - 4°C until they are shipped to the Laboratory.

- If samples are not preserved (a requirement for certain analytes), the technical holding time is shortened to 7 days.

Appendix D: Sampling Checklists

Appendix D-1: Personnel Preparation Checklist (Page 1 of 1)

Personnel Briefing	Yes	No	Comments:
1. Did you review sampling team responsibilities and identify individual(s) responsible for corrective actions?			
2. Did you ensure that you have met the appropriate personal safety and protection requirements?			
3. Did you identify sampling locations?			
4. Have you determined the number and type of samples to be collected?			
5. Did you review sample collection methods?			
6. Have you reviewed sample container requirements?			
7. Did you review decontamination requirements, procedures, and locations?			
8. Did you determine holding times and conditions?			
9. Did you determine Performance Evaluation (PE) and Quality Control (QC) sample requirements?			
10. Have you obtained shipping cooler temperature blanks, if required?			
11. Did you review sample label and tag requirements?			
12. Did you review Traffic Report/Chain of Custody (TR/COC) Record and custody seal requirements?			
13. Have you obtained the Laboratory name, shipping addresses, and telephone number?			
14. Did you review cooler return instructions?			
15. Have you obtained shipping company information (name, telephone number, account number, pickup schedule)?			
16. Have you obtained shipping schedules?			
17. Did you review shipment reporting requirements and the appropriate contact names and telephone numbers for reporting?			
18. Have you included any sampler comments regarding sampling issues (e.g., low volumes, matrix, suspected concentrations based on field measurements)?			

Appendix D-2: General Sample Collection Checklist (Page 1 of 1)

General Sample Collection	Yes	No	Comments:
1. Did you identify and mark the sampling location with buoys, flags, or stakes according to the sampling plans, maps, and grids?			
2. If the sampling location is inaccessible, did you contact the appropriate field or Regional personnel for instructions?			
3. Did you use the correct sampling equipment?			
4. Did you follow the correct decontamination procedures?			
5. Did you follow the correct collection procedures?			
6. Did you use the correct sample containers for each sample collected?			
7. Did you collect the correct volume for each sample?			
8. Did you collect the correct type of sample, including primary samples and Quality Control (QC) samples?			
9. Did you properly preserve each sample collected?			
10. Did you correctly document and label each sample with all necessary information?			
11. Did you determine and adhere to all holding times?			

Appendix D-3: Completing Field Logbook Checklist (Page 1 of 1)

Completing Field Logbook	Yes	No	Comments:
1. Did you use waterproof ink when writing in the field logbook?			
2. Did you document sampling project information such as: • Project name, ID, and location; • Names of sampling personnel; • Geological observations, including maps; • Atmospheric conditions; • Field measurements; and • Sampling dates, times, and locations?			
3. Did you record sampling activity information such as: • Sampling dates and times; • Sample identifications; • Sample matrixes; • Sample descriptions (e.g., odors and/or colors); • Number of samples taken; • Sampling methods/equipment; and • Description of QC samples?			
4. Did you document any and all deviations from the sampling plan?			
5. Did you document any and all difficulties in sampling and/or any unusual circumstances?			
6. Were all errors corrected by crossing a line through the error, initialing the error, dating the error, and then adding the correct information?			

Appendix D-4: Documenting CLP Sample Numbers and Completing Handwritten Sample Labels Checklists (Page 1 of 2)

Documenting CLP Sample Numbers	Yes	No	Comments:
1. Did the Region provide Sample Numbers on adhesive labels?			
2. If Sample Numbers must be handwritten on sample labels, was waterproof ink used?			
3. Were the Sample Numbers on the labels correct? Organic Sample Numbers begin with the Regional letter code followed by letters and numbers. Inorganic Sample Numbers begin with "M" followed by the Regional letter code and then letters and numbers. **Note:** The following characters are not used in generating Sample Numbers and should never appear on any paperwork send to the Laboratory: I; O; U; S; and V. Also, the last character of a Sample Number will never be a letter.			
4. Were primary samples uniquely numbered and designated to only one sample? **Note:** Samples collected for total metal and dissolved metal analyses must receive separate, unique, Sample Numbers.			
5. Were Quality Control (QC) samples numbered accordingly?			
6. If more Sample Numbers were needed, did you contact the appropriate Regional personnel?			
7. Were all errors corrected by crossing a line through the error, initialing and dating the error, then adding the correct information?			
Completing Handwritten Sample Label	**Yes**	**No**	**Comments:**
1. Did you using the correct labels?			
2. If sample information was written on by hand, was waterproof ink used?			
3. Were the sample labels containing Sample Number, location, concentration, preservative, etc., attached to each sample bottle as the sample was collected?			
4. Were the specific requirements followed for total and dissolved metals analysis, QC and Performance Evaluation (PE) samples, and SW-846 Method 5035?			

Appendix D-4: Documenting CLP Sample Numbers and Completing Handwritten Sample Labels Checklists (Page 2 of 2)

Completing Handwritten Sample Label	Yes	No	Comments:
5. Were all temperature blanks labeled with "TEMPERATURE BLANK"?			
6. Was clear tape placed over the sample labels to protect the labels from moisture and to help the labels adhere to the sample bottle?			
7. Were all errors corrected by crossing a line through the error, initialing the error, dating the error, and then adding the correct information?			

Appendix D-5: Completing Handwritten Sample Tags & Custody Seals Checklists (Page 1 of 2)

Completing Handwritten Sample Tags	Yes	No	Comments:
1. Was waterproof ink used on the sample tags?			
2. If Regionally required for individual sample containers, was the project code on the sample tag completed?			
3. Was the station number on the sample tag completed?			
4 Was the date filled in using the format MM/DD/YYYY?			
5. Was the time of sample collection indicated?			
6. Was the box checked indicating composite or grab sample?			
7. Was the station location on the sample tag completed?			
8. Did you indicate whether or not the sample was preserved by checking "yes" or "no?"			
9. Was the appropriate analysis indicated on the sample tag?			
10. Was the appropriate Sample Number indicated and cross-referenced with the number on the sample label?			
11. Did you sign the sample tags?			
12. Did you attach the sample tag to the neck of the sample bottle with string, stretch string, or wire (recommended method)? **Note:** Do **NOT** use wire to attach a sample tag to a metal sample.			
13. Were all errors corrected by crossing a line through the error, initialing the error, dating the error, and then adding the correct information?			
Completing Custody Seal	**Yes**	**No**	**Comments:**
1. Did you sign and date the custody seal?			
2. Did you attach the completed custody seal to the sample bottle or container, placing the seal over the cap or lid of each sample bottle or container?			
3. Did you attached the completed custody seal to the sample shipping container or cooler, placing the seal such that it will be broken if the container or cooler is opened or tampered with?			

Appendix D-5: Completing Handwritten Sample Tags & Custody Seals Checklists (Page 2 of 2)

Completing Handwritten Sample Tags	Yes	No	Comments:
4. Were all errors corrected by crossing a line through the error, initialing the error, dating the error, and then adding the correct information?			

Appendix D-6: Packing Shipping Container Checklist (Page 1 of 2)

Packing Shipping Container	Yes	No	Comments:
1. Were you shipping samples in a clean waterproof metal or hard plastic ice chest or cooler in good condition?			
2. Were all inapplicable labels removed from previous shipments?			
3. Were all inside and outside drain plugs closed and covered with suitable tape (e.g., duct tape)?			
4. Was the inside of the cooler lined with plastic (e.g., large heavy-duty garbage bag)?			
5. Was the lined shipping cooler packed with noncombustible absorbent packing material such as rock wool, ground corn cobs, perlite, or a clay-based absorbent (e.g., kitty litter or 'oil dry')?			
6. Were sample containers placed in the cooler in an upright position not touching one another?			
7. Was a sample shipping cooler temperature blank included in the cooler?			
8. Was there sufficient packing material around and in between the sample bottles and cans to avoid breakage during transport?			
9. If required, was double-bagged ice placed on top and around sample bottles to keep the samples cold 4° (± 2°C)? **Do Not Pack Loose Ice Into the Cooler!**			
10. Was the top of the plastic liner fastened and secured with tape?			
11. Was a completed custody seal placed around the top of the fastened plastic liner?			
12. Were all sample documents enclosed within the cooler (e.g., TR/COC Record and cooler return instructions) in a waterproof plastic bag?			
13. Did the documentation in the cooler only address the samples in that cooler?			
14. Was the site name absent from all documentation?			
15. Was the plastic bag, containing the documentation, taped to the underside of the cooler lid?			

Appendix D-6: Packing Shipping Container Checklist (Page 2 of 2)

Packing Shipping Container	Yes	No	Comments:
16. Were cooler return instructions and airbills, if required, taped to the underside of the cooler lid?			
17. Was the return address of the cooler written with permanent ink on the underside of the cooler lid?			
18. Was tape placed around the outside of the entire cooler with tape over the hinges?			
19. Were the completed custody seals placed over the top edge of the cooler so the cooler cannot be opened without breaking the seals?			
20. Was the return address label attached to the top left corner of the cooler lid?			
21. Were instructional labels attached to the top of the cooler, as necessary (e.g., "This End Up," "Do Not Tamper With," or "Environmental Laboratory Samples")?			
22. If shipping hazardous samples, were the correct labels attached to the cooler (e.g., "Flammable Liquids", "Caution", or "Poison")?			
23. If shipping samples containing methanol as a preservative (e.g., samples to be analyzed by SW-846 Method 5035), was a label used to indicate Methanol, UN#, and Limited Quantity?			

Appendix D-7: Packing Sample Container Checklist (Page 1 of 1)

Packing Sample Container	Yes	No	Comments:
1. Did you follow all state, Federal, Department of Transportation (DOT), and International Air Transportation Association (IATA) regulations governing the packaging of environmental and hazardous samples? **Note:** If samples contain methanol preservation (e.g., samples to be analyzed by SW-846 Method 5035), refer to the packaging instructions in Appendix A.			
2. Were all Sample Numbers, labels, tags, and custody seals attached to the correct sample containers?			
3. Was an inventory conducted of Sample Numbers, fractions, and containers, and verified against the TR/COC Records?			
4. Were the correct number and type of primary, Performance Evaluation (PE), and Quality Control (QC) samples collected?			
5. Were all sample containers sealed in clear plastic bags with the sample label and tag visible through the packaging?			
6. Were all soil/sediment samples known to contain dioxin securely enclosed in metal cans (e.g., paint cans) with the lids sealed?			
7. Was suitable absorbent packing material placed around the sample bottles or containers?			
8. Were the outsides of metal containers labeled properly with the Sample Number and fraction of the sample inside?			

Appendix D-8: Shipping & Reporting CLP Samples Checklists (Page 1 of 1)

Shipping CLP Samples	Yes	No	Comments:
1. Did you follow all state, Federal, Department of Transportation (DOT), and International Air Transportation Association (IATA) regulations governing the shipment of environmental and hazardous samples?			
2. Was a separate airbill filled out for each cooler being shipped?			
3. Was the airbill filled out completely, including correct Laboratory name, address, and telephone number, identification of recipient as "Sample Custodian," and appropriate delivery option, such as overnight or Saturday?			
4. Was the completed airbill attached to the top of the cooler with the correct Laboratory address?			
5. If more than one cooler was being shipped to the same Laboratory, were they marked as "1 of 2," "2 of 2," etc.?			
6. Were the samples being shipped "overnight" through a qualified commercial carrier (e.g., FedEx, UPS, Purolator, or Airborne Express)?			
Reporting CLP Samples	**Yes**	**No**	**Comments:**
1. Did you contact the Contract Laboratory Program Sample Management Office (CLP SMO) on the same day samples were shipped?			
2. If the samples were shipped after 5:00 PM Eastern Time (ET), were they reported to CLP SMO by 8:00 AM ET the following business day?			
3. Did you notify CLP SMO by 3:00 PM ET on Friday for sample shipments that will be delivered on Saturday?			
4. Did you provide CLP SMO with: • Your name, phone number, and Region number; • Case Number of the project; • Exact number of samples, matrix(ces), concentration(s), and type of analysis; • Laboratory(ies) to which the samples were shipped; • Carrier name and airbill number; • Date of shipment; • Date of next shipment; and • Any other information pertinent to the shipment?			

Appendix E: Glossary

Analyte -- The element, compound, or ion an analysis seeks to determine; the element of interest.

AOC (Analytical Operations/Data Quality Center) -- Directs the Contract Laboratory Program (CLP) from within the Office of Emergency and Remedial Response (OERR) in the Office of Solid Waste and Emergency Response (OSWER).

Base Neutral Acid (BNA) -- Semi-volatile substance that can be either a low or low/medium concentration of a contaminant. See Semi-Volatile Substance.

Case -- A finite, usually predetermined, number of samples collected over a given time period from a particular site. Case Numbers are assigned by the Sample Management Office (SMO). A Case consists of one or more Sample Delivery Groups (SDGs).

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) -- Initiated in December 1980, CERCLA provided broad federal authority to respond directly to the release or possible release or hazardous substances that may endanger human health or the environment. CERCLA also established a trust fund to provide for cleanup when no responsible party could be identified, hence CERCLA is commonly referred to as "Superfund".

Contract Laboratory Program (CLP) -- A national program of commercial Laboratories under contract to support the USEPA's nationwide efforts to clean up designated hazardous waste sites by providing a range of chemical analytical services to produce environmental data of known and documented quality. This program is directed by USEPA's Analytical Operations/Data Quality Center (AOC).

Contract Laboratory Program Project Officer (CLP PO) -- Monitors technical performance of the contract Laboratories in each Region.

Contract Laboratory Program Routine Analytical Services (CLP RAS) -- Services provided by the Regional Sample Control Center (RSCC) Coordinator such as the processing of a request for Case Numbers and the scheduling of delivery of those Case Numbers to sampling personnel.

Contract Laboratory Program Sample Management Office (CLP SMO) -- A contractor-operated facility operated under the Contract Laboratory Program, awarded and administered by the USEPA. Provides necessary management, operations, and administrative support to the CLP. CLP SMO coordinates and schedules sample analyses, tracks sample shipments and analyses, receives and tracks data for completeness and compliance, and processes Laboratory invoices.

Custody Seal -- An adhesive label or tape that is used to seal a sample bottle or container that maintains chain-of-custody and that will break if the sample bottle or container is opened or tampered with.

Cyanide (Total) -- Cyanide ion and complex cyanides converted to hydrocyanic acid (HCN) by reaction in a reflux system of a mineral acid in the presence of magnesium ion.

Data Quality Objective (DQO) -- The requirements established to maintain the quality of the data being collected.

Data Validation -- Data validation is based on Region-defined criteria and limits, professional judgement of the data validator, and (if available) the Quality Assurance Project Plan (QAPP) and Sampling and Analysis Plan (SAP).

Equipment Blank -- A sample used to check field decontamination procedures. See Field Blank.

Field Blank -- Any blank sample that is submitted from the field. Each field blank is assigned its own unique EPA Sample Number. A field blank checks for cross-contamination during sample collection, sample shipment, and in the Laboratory. A field blank includes trip blanks, rinsates, equipment blanks, etc.

Field Duplicate -- Checks reproducibility of Laboratory and field procedures and indicates non-homogeneity.

Field Operations Reporting Management System (FORMS) II Lite -- A stand-alone, Windows-based software application that enables samplers to automatically create and generate sample documentation both prior to and during a sampling event.

Field QC Sample -- Used to detect for contamination or error in the field.

Field Sample -- Primary sample material taken out in the field from which other samples, such as duplicates or split samples, are derived. A field sample can be prepared in the field and sent for analysis in one or multiple containers, and is identified by a unique EPA Sample Number.

Field Sampling Plan (FSP) -- Developed to outline the actual steps and requirements pertaining to a particular sampling event. Explains, in detail, each component of the event to all involved sampling personnel.

Holding Time -- The elapsed time expressed in hours, days, or months from the date of receipt of the sample by the Laboratory until the date of its analysis.

> **Contractual** -- The lengths of time that the Contract Laboratory Program (CLP) Laboratory must follow to comply with the terms of the contract, and are described in the CLP analytical services Statement of Work (SOW). They are the shorter than technical holding times to allow for sample packaging and shipping.
>
> **Technical** -- The maximum lengths of time that samples may be held from time of collection to time of preparation and/or analysis and still be considered valid.

Laboratory Blank -- See Method Blank.

Laboratory Duplicate -- A sample required by the Laboratory's contract to check the precision of inorganic analyses.

Laboratory QC Sample -- An additional volume of an existing sample, as required by the Laboratory's contract, used to detect contamination or error in the Laboratory's practices.

Low Concentration Sample -- A sample whose concentrations are thought not to exceed the detection ranges stated within the appropriate Contract Laboratory Program (CLP) Statement of Work (SOW) (e.g., samples from a drinking water well, municipal water supplies, etc.).

Low/Medium Concentration Sample -- A sample whose concentrations are suitable for analysis by the low/medium concentration Contract Laboratory Program (CLP) Statement of Work (SOW).

Matrix -- The predominant material of which a sample to be analyzed is composed.

Matrix Spike (MS) -- Sample required by the Laboratory's contract to check the accuracy of organic and inorganic analyses. It is an aliquot of a sample (water or soil) that is fortified (spiked) with known quantities of a specific compound and subjected to the entire analytical procedure. Also see Matrix Spike Duplicate.

Matrix Spike Duplicate (MSD) -- Sample required by the Laboratory's contract to check the accuracy and precision of organic analyses. It is a second aliquot of the same matrix as the Matrix Spike (MS) that is spiked to determine the precision of the method. Also see Matrix Spike.

Medium Concentration Sample -- A sample usually collected on-site in areas of moderate dilution by normal environmental processes.

Method Blank -- An analytical control consisting of all reagents, internal standards and surrogate standards (or System Monitoring Compounds [SMCs] for Volatile Organic Analysis [VOA]), that is carried throughout the entire analytical procedure. The method blank is used to define the level of Laboratory, background, and reagent contamination. Also referred to as Laboratory blank when defining the level of Laboratory contamination. Also see Laboratory Blank.

Office of Solid Waste and Emergency Response (OSWER) -- The USEPA office that provides policy, guidance, and direction for the USEPA's Office of Solid Waste and Emergency Response (OSWER) programs, including Superfund.

Performance Evaluation (PE) Sample -- A sample of known composition provided by USEPA for contractor analysis. Used by USEPA to evaluate contractor performance.

Pesticides -- Substances intended to repel, kill, or control any species designated a "pest", including weeds, insects, rodents, fungi, bacteria, and other organisms. Under the Contract Laboratory Program (CLP), only organochlorine pesticides are analyzed (e.g., DDT, Dieldrin, Endrin, etc.).

Polychlorinated Biphenyls (PCBs) -- A group of toxic, persistent chemicals used in electrical transformers and capacitors for insulating purposes, and in gas pipeline systems as a lubricant. The sale and new use of PCBs were banned by law in 1979.

Quality Assurance (QA) -- An integrated system of management activities involving planning, implementation, assessment, reporting, and quality improvement to ensure that a process, item, or service is of the type and quality needed and expected by the customer.

Quality Assurance Project Plan (QAPP) -- Document written to meet requirements outlined in the document *EPA Guidance for Quality Assurance Project Plans* (EPA QA/R-5). Prepared in advance of field activities and used by sampling personnel to develop any subsequent plans such as the Sampling Analysis Plan (SAP) or the Field Sampling Plan (FSP).

Quality Control (QC) -- The overall system of technical activities that measures the attributes and performance of a process, item, or service against defined standards to verify that they meet the stated requirements established by the customer; operational techniques and activities that are used to fulfill requirements for quality.

Regional Sample Control Center (RSCC) Coordinator -- In most Regions, coordinates sampling efforts and serves as the central point-of-contact for sampling questions and problems. Also assists in coordinating the level of Regional sampling activities to correspond with the monthly projected demand for analytical services.

Regional Site Manager -- Coordinates the development of data quality objectives and oversees project-specific remedial or removal contractors, state officials, or private parties conducting site sampling efforts.

Rinse Blank -- A sample used to check decontamination procedures. Also see Field Blank.

Routine Analytical Service (RAS) -- The standard inorganic, organic, and organic low concentration high volume, multi-component analyses available through the Contract Laboratory Program (CLP).

Sample -- A single, discrete portion of material to be analyzed, which is contained in single or multiple containers and identified by a unique Sample Number.

Sample Delivery Group (SDG) -- An *organic* SDG is a group of 20 or fewer field samples within a Case [excluding Performance Evaluation (PE) samples] received over each 7-calendar day period. An *inorganic* SDG is a group of 20 or fewer field samples (excluding PE samples) received over a 7-calendar-day period (3-calendar-day period for 7-day turnaround) during which all field samples in a case are received (said period beginning with the receipt of the first sample in the SDG). An SDG is defined by one of the following, whichever occurs first:

- Each Case of field samples received; or
- Each 20 field samples (excluding PE samples) within a Case; or
- Each 7 calendar day period (3 calendar day period for 7-day turnaround) during which field samples in a Case are received (said period beginning with the receipt of the first sample in the SDG) [applies to inorganics only].

Sample Label -- An identification label attached to a sample bottle or container to identify the sample.

Sample Number -- A unique number used to identify and track a sample. This number can be recorded on a sample label or written on the sample bottle or container using indelible ink.

Sample Tag -- A tag attached to a sample that identifies the sample and maintains chain-of-custody.

Sampling Analysis Plan (SAP) -- A document that explains how samples are to be collected and analyzed for a particular sampling event.

Semi-Volatile Organic Analyte (SVOA) -- A compound amenable to analysis by extraction of the sample using an organic solvent. A term used synonymously with the term Base/Neutral/Acid (BNA) substance. Also see Base Neutral Acid.

Statement of Work (SOW) -- A document that specifies how Laboratories analyze samples under a particular Contract Laboratory Program (CLP) analytical program.

Superfund -- The program operated under the legislative authority of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and Superfund Amendments and Reauthorization Act (SARA) that funds and carries out USEPA removal and remedial activities at hazardous waste sites. These activities include establishing the National Priorities List (NPL), investigating sites for inclusion on the list, determining their priority, and conducting and/or supervising cleanup and other remedial actions.

Superfund Amendments and Reauthorization Act (SARA) -- The 1986 amendment to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) .

Traffic Report/Chain of Custody (TR/COC) Record -- A record that is functionally similar to a packing slip that accompanies a shipment of goods. Used as physical evidence of sample custody and functions as a permanent record for each sample collected.

Trip Blank -- A sample used to check for contamination during sample handling and shipment from field to Laboratory. Also see Field Blank.

Volatile Organic Analyte (VOA) -- A compound amenable to analysis by the purge-and-trap technique. Used synonymously with the term purgeable compound.